



Attorney Docket No. 1349.1363

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Myung-hoon SUNWOO

Application No.: 10/731,404

Group Art Unit: 2193

Filed: December 10, 2003

Examiner: Tan V. Mai

For: FFT OPERATING APPARATUS OF PROGRAMMABLE PROCESSORS AND  
OPERATION METHOD THEREOF

**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

**Attention: After Final**

Sir:

Applicant requests review of the final rejection mailed September 14, 2007 finally  
rejecting claims 4-6, 12 and 13 of the above-identified application.

The request is being filed with a notice of appeal.

The review is requested for the reasons stated on the attached pages.

Respectfully submitted,

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Dated:

December 13, 2007

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### **Reasons for Request for Review**

#### **Status of claims**

Claims 1-13 are pending in the application. Claims 1-3 and 7-11 are indicated as allowed, while claims 4-6, 12 and 13 are rejected. Independent claims 4 and 12 and dependent claims 5, 6 and 13 stand rejected under 35 U.S.C. § 101 on the basis that the claimed invention is directed to non-statutory subject matter.

#### **Summary**

The final rejection under 35 U.S.C. § 101 is improper. Specifically, the Office Action takes the position that a mathematical function is recited and that a useful, concrete and tangible result appears to be lacking. However, Applicant asserts for the reasons indicated below that the Office Action fails to establish that non-statutory subject matter has been recited, as required under current PTO guidelines, found for example at MPEP § 2106.

By way of example and not limitation, independent claim 4 recites at least: "...generating an offset address of butterfly input/output data to read data and write an operated result in a data memory...."

By way of example and not limitation, independent claim 12 recites at least: "...storing the generated offset address of the butterfly input/output data in an offset register of a programmable processor...."

In the final Office Action mailed September 14, 2007 (the Final Office Action), the Office reaffirmed its positions that:

- (i) "In order for claims to be statutory, claims must include a practical application with a concrete, useful, and tangible result."
- (ii) "Claims 4-6 and 12-13 merely disclose steps for performing mathematical function without disclosing a **practical application with a concrete, useful, and tangible result, as they are pre-emptive in any application.**"

(Final Office Action, page 3).

Applicant asserts the rejections are improper for at least the reasons provided below:

**Reason Number 1**

As provided in the Guidelines, the burden is on the USPTO to set forth a prima facie case of unpatentability under 35 U.S.C. § 101. Thus, claims are presumed to belong to one of the four enumerated categories of patentable subject matter recited in 35 U.S.C. § 101 unless the Office is able to show otherwise. In particular, as provided in the Guidelines at MPEP § 2106 IV. B., paragraph 5:

The burden is on the USPTO to set forth a prima facie case of unpatentability. Therefore if the examiner determines that it is more likely than not that the claimed subject matter falls outside all of the statutory categories, the examiner must provide an explanation.

Applicant asserts that claims 4 and 12 fall within at least one of the “process” and the “manufacture” categories. The Office Action includes no assertion to the contrary. Accordingly, the Office has failed to set forth a prima facie case of unpatentability, and therefore claims 4 and 12 are submitted to be directed to statutory subject matter within the meaning of 35 U.S.C. § 101. Claims 5, 6 and 13, which depend from and include all of the features of independent claims 4 and 12 respectively, should be allowable for at least the same reasons as claims 4 and 12.

**Reason Number 2**

According to the Guidelines, an examiner must ascertain the scope of the claim to determine whether it covers either a § 101 judicial exception or a practical application of a § 101 judicial exception. In particular, as provided in the Guidelines at MPEP § 2106 IV. C. 1.:

An examiner must ascertain the scope of the claim to determine whether it covers either a § 101 judicial exception or a practical application of a § 101 judicial exception. The conclusion that a particular claim includes a § 101 judicial exception does not end the inquiry because “[i]t is now commonplace that an application of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.” *Diehr*, 450 U.S. at 187, 209 USPQ at 8 (emphasis in original); accord *Flook*, 437 U.S. at 590, 198 USPQ at 197; *Benson*, 409 U.S. at 67, 175 USPQ at 675.).

Applicant asserts that neither of claims 4 and 12 recite any of the three § 101 judicial exceptions to patentable subject matter, i.e., an abstract idea, a law of nature, or a natural phenomenon, and therefore they necessarily recite more than a § 101 judicial exception. The Office Action asserts the rejected claims “merely disclose steps for performing mathematical function,” however no reason is provided in the Office Action as to why this rises to a judicial

exception. Claims 4 and 12 are thus submitted to be directed to statutory subject matter within the meaning of 35 U.S.C. § 101. Claims 5, 6 and 13, which depend from and include all of the features of independent claims 4 and 12 respectively, should be allowable for at least the same reasons as claims 4 and 12.

### **Reason Number 3**

The Office Action contends that a practical application with a concrete, useful, and tangible result appears to be lacking. According to the Guidelines at MPEP § 2106 IV. C. 2. however, an inquiry as to whether a claim has a practical application is only necessary for claims that include *excluded* subject matter, such as an abstract idea, a law of nature, or a natural phenomenon. Thus, the “practical application,” consideration is meant to determine whether a claim that includes excluded subject matter is *nevertheless* directed to statutory subject matter, since the claim is for a practical application of the excluded matter. Id.

However, as Applicant asserts above, the previous Office Actions fail to establish that any of claims include an abstract idea, a law of nature, or a natural phenomenon in the first place, so requiring them to be directed to a practical application is at least premature, as well as inapposite.

Applicant will assume for the sake of argument that the Office Actions have established the claims are directed to one of the judicial exceptions described above. Even so, Applicant asserts that claims 4 and 12 provide a transformation or reduction of an article to a different state. For example, the guidelines state at MPEP § 2106 IV. C. 2. (1):

USPTO personnel first shall review the claim and determine if it provides a transformation or reduction of an article to a different state or thing. If USPTO personnel find such a transformation or reduction, USPTO personnel shall end the inquiry and find that the claim meets the statutory requirement of 35 U.S.C. 101.

Claim 4 is directed to a fast Fourier transform operation method to carry out an FFT operation in a programmable processor chip. Claim 4 recites “generating an offset address of butterfly input/output data to read data and write an operated result in a data memory.” Claim 4 further recites “storing the generated offset address of the butterfly input/output data in an offset register of a programmable processor.” Claim 4 further recites “switching a data to provide the butterfly input data from the data memory and write the output data in the data memory.” All of these recited features produce a tangible result because there is a physical transformation in the

data memory into which data is written and in the offset register into which the address is stored. Therefore, it is submitted that claim 4 (and claims 5 and 6 which depend from claim 4) meets the requirements of 35 U.S.C. § 101.

Claim 12 is directed to a computer-readable storage controlling a computer. Claim 12 recites "generating an offset address of butterfly input/output data to read data and write an operated result in a data memory." Claim 12 further recites "storing the generated offset address of the butterfly input/output data in an offset register of a programmable processor." Claim 12 further recites "switching data to provide the butterfly input data from the data memory and write the output data in the data memory." As described above, writing data into a data memory and storing address information in an offset register physically transforms the memory and the register. Therefore, a tangible result is produced. In view of the above, it is submitted that claim 12 (and claim 13 which depends from claim 12) meets the requirements of 35 U.S.C. § 101.

For all of the above reasons, Applicant asserts the rejections of claims 4-6, 12 and 13 under 35 U.S.C. § 101 are deficient.